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ABSTRACT

An account of the career of Isaiah Bowman, a leading figure in American science, is discussed in the context of the historical uses of geography and the contemporary perspective of that discipline. The first of three sections briefly addresses the current crisis in the field of geography: a narrowness of disciplinary perspective. Such a view would have appalled Bowman, who, while a notable geographer, was also a leader in the formulation of national and international science policy, American foreign policy, and postwar reconstruction policy. Section 2 outlines Bowman's view of science. This view encompassed two contradictory perspectives--that of science as an institution independent of the rest of society and that of science as an important tool for solving social problems. Bowman sought to resolve this contradiction through the role he played in the establishment of the Science Advisory Board, discussed in section 3. This board, established in 1933 under Bowman's advice, coordinated all government research, initiated new research, and provided expert advice to government departments. Victim of a 2-year dispute over control between the President and the National Academy, the Advisory Board was dismantled in 1935. However, when the struggle arose again after World War II, Bowman resurfaced in his dual role as social idealist and political pragmatist. (LP)

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ISAIAH BOWMAN AND NEW DEAL SCIENCE POLICY

by
Neil Smith

Paper presented at the Annual Meeting of the Association of American Geographers (Denver, CO, April 24-27, 1983).

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I. Introduction

This paper has two primary functions. First, and most important, it is an historical account of an intriguing and revealing ordeal in American science policy -- an ordeal in which Isaiah Bowman played a central role. But second, it has a contemporary relevance in that I want to set this historical account within the general framework of The Uses of Geography.

The crisis which the discipline of geography is currently experiencing is not, strictly speaking a disciplinary crisis. It is a crisis of the relationship between the discipline of geography and the broader society which creates this discipline as part of its scientific division of labour.

In the present predicament, geographers have a distinct tendency toward pangs of professional inferiority. This comes, I think from a certain narrowness of our disciplinary perspective; it is almost as if, having convinced ourselves a priori of the interdisciplinary character of geography and of its synthetic function, we have used this as an excuse for not looking seriously toward interesting work in other disciplines. We are now paying the price for this relative isolation. The discipline's own history is too often written from this narrow perspective, whereby issues deemed not truely geographical are skipped over or ignored. This goldfish bowl perspective would have appalled Isaiah Bowman; such an approach to Bowman's own history as a powerful national and international figure

in science policy, American foreign policy, and reconstruction efforts in the wake of two wars, would make for dull reading. Here is a geographer who for several decades operated at the edge of, using Martin's phrase, the vortex of power. The history is not only fascinating; it is highly instructive of the historical uses of geography. While I shall not make those explicit conclusions here, but shall be content with discussing the issues involved in the origin and functioning of the Science Advisory Board, this is the backdrop to the following account.

II. Bowman's views of science.

The relationship between science and its societal application has been a major concern for many years and the present pattern of response dates to Francis Bacon and the origins of modern science nearly 400 years ago. Bacon stressed that science and its institutions should have considerable independence from the rest of society. As an ideal, this independence from external social control remains a part of many contemporary philosophies of science. Yet since Bacon's time, science has been pressed increasingly into service in search of solutions to social problems, making the ideal of independence more difficult to maintain. Particularly with the rapid industrialization of Europe and North America in the nineteenth century, a quite opposite philosophy of science developed whereby science is seen as a social product -- its content as well as the problems it considers being in large part socially determined. Today both traditions survive, and

while debate persists, it is not unusual to find both traditions co-existing in the thinking and writing of individual scientists. Isaiah Bowman was one such scientist.

Bowman was a persistent advocate of science. His belief in science was in no way a belief in science for its own sake, but rather a belief in science as a necessary progressive social force. Through patient and careful support, he believed, science could develop the tools and make the discoveries that would make social advance easier and less painful. "Science has flowered," he wrote in his report on The Graduate School in American Democracy, "because of its obvious social use." And so it should be, for Bowman. Bowman's life and work was devoted to the advancement of science. Apart from his numerous geographical posts, Bowman at various times in the 1930s and 1940s was President of the American Association for the Advancement of Science, Chairman of the National Research Council, Vice President of the National Academy of Sciences, President of the History of Science Society. Bowman the realist understood that "Individual Scientists... will tend to approve the policies of the companies (and governments) that supply them with a living. Yet Bowman the idealist, intent on stressing the role of the "democratic ideal" in American graduate education, could also claim that these institutions "have their opportunities and terms set...by democratic principles. They are not governed by a class. Their judgements are not bought."

I have simplified considerably the character of these opposing views of science in Bowman's thought. Such a blatent contradiction would be hard to reconcile, and appears in a much

more complex way in Bowman's writing. Nevertheless, this contradiction -- expressed in the form of idealism versus idealism -- does pervade Bowman's vision of science. It is intimately linked, as is suggested in his invocation of the "democratic ideal", to his political views, and there is a continuity between this view of science and the "world view" which informed his foreign policy activities. But that is a different story, and a different chapter in my research. In fact, this contradiction lives a healthy life in Bowman's writing on science and is never resolved. To find some kind of resolution we must look not to what Bowman said but to what he did.

III. Science Advisory Board.

In the spring of 1933 when Roosevelt began flooding Congress with his New Deal legislation, the focus was on conservation, relief and industrial recovery. Isaiah Bowman was Director of the American Geographical Society and that spring was elected to the chairmanship ofthe National Research Council. The NRC was an arm of the National Academy of Sciences. It was established in May 1918 in an Executive Order from President Woodrow Wilson, and its function was to explore the methods and develop the projects that would make the results and resources of science more directly useful in political decision making, especially concerning the first world war.

Bowman was already a leading figure in American science through his service to the recently reorganized NRC. When he

took over its chairmanship, the administration was threatening a large cutback in federal funds to science in response to the deepening depression. The Academy had become a stodgy resting ground for the nation's most elite scientists, isolated from the events of the day -- suffering a "complete paralysis" Bowman would later recall. A group of more energetic men led by Bowman, Robert Millikan (the Nobel prize winning physicist), and Karl Compton (also a leading physicist, and President of MIT) set about shaking up the Academy through a revitalized N.R.C. Ever a entrepreneur, and, as described by Reymond Cochrane, author of the official history of the Academy, Bowman was a "vigorous executive, ...aggressive, highly articulate, and a tireless worker"; he set about immediately to convince the administration of the need to create a Science Advisory Board. Its function would be to coordinate all government research, initiate new and vital research, and provide expert advice to government departments on everything from internal appointments to substantive research questions. Where Academy members had made official but polite responses to the threatened cuts in science funding Bowman with the assistance of Henry Wallace, then Secretary of Agriculture, took the case straight to FDR. Science, Bowman insisted, was not responsible, as seemed to be widely believed, for the economic, social and political crisis accompanying the Depression. Rather, science was an asset. Faster than Bowman or anyone else had expected, the Science Advisory Board was signed into existence by Roosevelt on July 31st, 1933. An arm of the National Research Council, the Board's Director and Vice-Chairman was to be Bowman's. Compton was its

Chairman. Its other members included W.W. Campbell, President of the National Academy Frank Jewett, Vice President of AT&T and Charles Kettering, Vice President of General Motors.

There then followed one of the most intriguing political disputes in American science, the essence of which remained unresolved in practice until 1950 with the founding of the National Science Foundation (in which Bowman also played a considerable role). The dispute centered on who would control the Science Advisory Board. There was even a tragi-comedy of letters crossing in the mail, missed telephone messages, and second thoughts, not to mention a President's haste to clear his desk before retreating to Warm Springs, Georgia for the remainder of the summer. But behind it all lay a basic political argument which pitted the conservative old guard of the Academy, led by W.W. Campbell, President of the Academy, against a more pragmatic and more energetic (if hardly more liberal) group spearheaded by Bowman and including a majority of the members of the new board.

Campbell was an astronomer who had worked at the University of California's Lick Observatory atop Mt. Hamilton since 1901, and this is where he was during the whirlwind conception and birth of the SAB. It was Campbell who in 1922 observed the gravitational deviation of light, providing the first empirical verification of Einstein's general theory. And a stickler for detail he was. He insisted that the Science Advisory Board was illegal because the President's appointment of its members in the Executive Order contradicted the 1918 order which established the NRC and which gave jurisdiction over NRC appoin-

ments to the National Academy. Bowman, himself quite capable of being a stickler for detail, when it suited his cause, took a thoroughly pragmatic stance. In the confrontation which ensued, with Campbell demanding that the President rescind the Executive Order, Bowman insisted that the spirit of the thing was what was important, that regretable as they may be, the Presidential appointments did not contradict the vision of the Board, and that a great challenge lay before them for science to grasp. "How ghastly to waste all this paper and energy," he wrote to Millikan, "when great things so greatly want doing!" (30/7/33). Writing to Compton a fortnight later, he delcared that "the opportunity is boundless if we can get all of our associates to see that the issues before us are of such great moment that details of procedure are minor by comparison." (15/8/33).

Wallace would not at first let Campbell's objection reach the President, and the fight cooled down for a while. Bowman had won, but it was a Pyrrhic victory. The potential of the SAB had been severely damaged. The battle heated up again within the year, with the suggestion that 6 new members should be added to the board under a new Executive Order. This, Bowman declared, would "give Campbell apoplexy," especially on discovering that two of the six were not Academy members. And Bowman was right. But of greater interest here is the change that took place in Bowman's position. Having originally declared himself indifferent to whether SAB appointments were Presidential or made by the Academy, discarding the issue as a "detail of procedure," he now says in a letter to Secretary Wallace that he

deems it "of the utmost importance that the authority and prestige of Presidential appointment of the Board be retained." (27/4/34).

Bowman again won this round, but the struggle over Academy versus Presidential control had by now completely crippled the Board. It was politely dismantled in July 1935, after the expiration of its initial two year period of appointment. Bowman was profoundly disappointed, and this experience, very probably influenced his decision in the Second World War to focus his efforts on foreign policy, geopolitical concerns and post-war reconstruction, rather than to become involved with Compton, Millikan and Vannever Bush in the OSRD -- the war-time science arm of government.

In the heat of the political moment, Bowman the pragmatist had won out. But the same struggle arose again after World War II with plans for a National Science foundation. The forum was different -- this time it focused on the Congress -- but the issues were the same. Bowman the idealist resurfaced in the beginning of the struggle, only to be superceded again by Bowman the political pragmatist.